

MPM2D 2.7 Using Coordinates to Solve Problems

Recall:

Median _____

Altitude _____

Perpendicular bisector _____

To find the equation of a **median**:

- Find the midpoint of the opposite side
- Use the vertex and midpoint to determine the slope
- Use either point to determine the y-intercept
- Put information together into $y = mx + b$

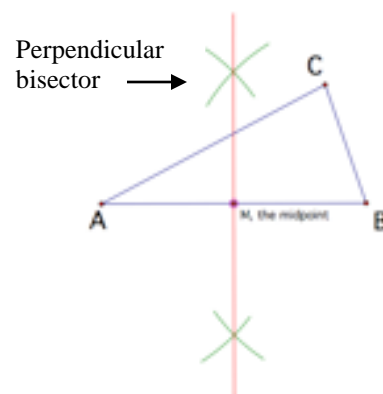
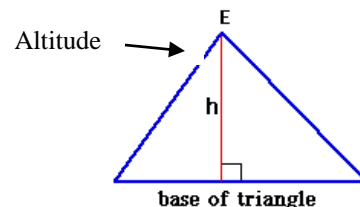
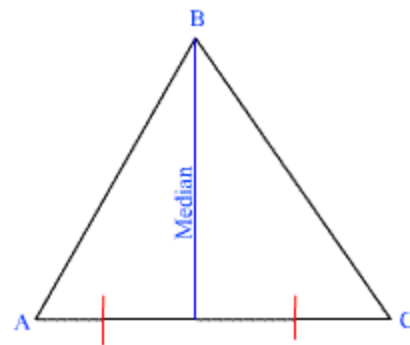
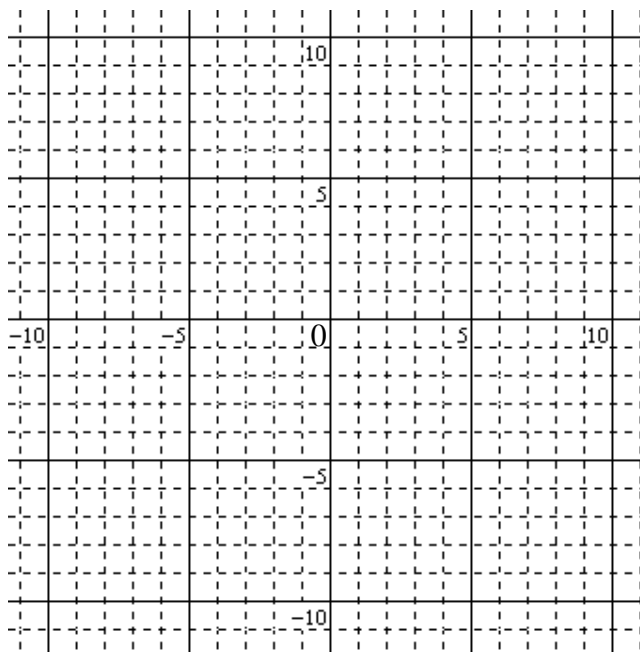
To find the equation of an **altitude**:

- Find the slope of the opposite side using the vertices
- Take the negative reciprocal of the slope
- Use the vertex containing the altitude to determine the y-intercept
- Put information together into $y = mx + b$

To find the equation of a **perpendicular bisector**:

- Find the slope of the opposite side
- Take the negative reciprocal of the slope
- Find the midpoint of the opposite side
- Use the midpoint to determine the y-intercept
- Put information together into $y = mx + b$

Ex. a) Graph the triangle defined by D(-3, 0), E(-2, 9) and F(4, 2).



- b) Draw the altitude from E on the graph.
- c) Determine the equation of this altitude

d) Determine the length of the altitude to 1 decimal place.

- e) Draw the perpendicular bisector from EF on the graph.
- f) Determine the equation of this perpendicular bisector.